

**AMENDMENTS TO THE CLAIMS**

**Claim 1 (currently amended):** Procedure for the cold processing of tubular metal elements or other elements with dead or through holes, nuts ~~or similar~~, comprising the following machining ~~stages~~ steps:

- (a) ~~setting up and preparation of~~ preparing a blank (10) ~~in rolls or bars~~ of full metal material;
  - (b) ~~straightening the full metal material in the case of rolls and~~ cutting of the metal material (10) into pieces of a determined length;
  - (c) ~~pressing in sequence achieved by passing these~~ the pieces sequentially through a plurality of work stations (31) of a work centre ~~consisting of~~ comprising several hydraulic presses in order to obtain a blank element presenting one or two longitudinally opposite dead holes (19) separated by a central transverse section (20);
  - (d) ~~the through drilling of the blank by removal of this central traverse section~~ (20);
- wherein the metal elements have a diameter greater than 30 mm.

**Claim 2 (currently amended):** Procedure for the cold processing of metal elements such as standard and special shape extruded or pressed screws, ~~etc.~~, comprising the following machining ~~stages~~ steps:

- (a) ~~setting up and preparation of~~ preparing a blank (10) ~~in rolls or bars~~ of full metal material;
  - (b) ~~straightening the full metal material in the case of rolls and the~~ cutting of ~~this~~ the metal material (10) into pieces of a determined length;
  - (c) ~~pressing in sequence achieved by passing these~~ the pieces sequentially through a plurality of work stations (31) of a multi-hydraulic-press plant in order to obtain a finished element (20) with or without swarf or waste
- wherein the metal elements have a diameter greater than 30 mm.

**Claim 3 (currently amended):** The procedure ~~Procedure~~ according to any one of the claim 1, in which the setting up and preparation of the full blank (10) differs according to the metal

material used.

**Claim 4 (currently amended):** The procedure ~~Procedure~~ according to claim 3, carried out on material consisting of stainless steel, wherein the stainless steel is initially treated by solution annealing and pickled in a balanced solution of sulphuric acid, hydrofluoric acid, potassium permanganate and hydrogen peroxide, and subsequently washed repeatedly by means of immersion in a salting tank in order to facilitate the pressing.

**Claim 5 (currently amended):** The procedure ~~Procedure~~ according to claim 3, carried out on material consisting of low-alloy steel, wherein this material is pickled in sulphuric acid and subsequently washed in a phosphating tank in which, by chemical reaction, a layer of zinc phosphate is created on the surface of the piece, then immersed in a sodium stearate tank where, again by chemical reaction, a thin layer of zinc stearate forms on top of the previous layer of zinc phosphate.

**Claim 6 (currently amended):** The procedure ~~Procedure~~ according to claim 2, wherein the products undergo shearing, ~~for example for hexagonal head screws~~, which can be carried out by means of a mechanical press.

**Claim 7 (currently amended):** The procedure ~~Procedure~~ according to claim 2, carried out on starting material in the form of rolls, in which the previously washed metal material is straightened by loading it on a wire-straightening unit designed to unroll the skein.

**Claim 8 (currently amended):** The procedure ~~Procedure~~ according to claim 2, carried out on starting material in the form of bars, in which these bars are loaded in bundles in a bar sectioning plant and in which the bars are presented at the cutting station in a synchronised way according to the needs of ~~the~~ a machining centre consisting of the presses.

**Claim 9 (currently amended):** The procedure ~~Procedure~~ according to claim 7, in which the free end of the roll is pulled through a first set of rollers and then through a system of opposite rollers designed to straighten the wire and transfer it to a cutting unit.

**Claim 10 (currently amended):** The procedure ~~Procedure~~ according claim 8, in which the material is cut into pieces of a predetermined length, advantageously by various possible

procedures such as for example mechanical or hydraulic processes by means of one or mobile blades or by a circular saw.

**Claim 11 (currently amended):** The procedure ~~Procedure~~ according to claim 1, characterised in that the a plant or machining centre (30) ~~consists of~~ a series of hydraulic presses of various sizes and power levels (31-34) connected by a transfer unit designed to move the pieces (10) being machined.

**Claim 12 (currently amended):** The procedure ~~Procedure~~ according to claim 11, wherein the transfer unit consists of a series of gripper units (40-44) powered by an appropriate source of energy.

**Claim 13 (currently amended):** The procedure ~~Procedure~~ according to claim 1, wherein the drilling ~~or shearing~~ is carried out by a special unit consisting of a vertical press.

**Claim 14 (currently amended):** The procedure ~~Procedure~~ according to claim 13, wherein this vertical press consists of a mechanical press.

**Claim 15 (currently amended):** The procedure ~~Procedure~~ according to claim 1, wherein the functioning and synchronisation of the individual presses and of the transfer unit are controlled by a PLC or a microprocessor.

**Claim 16 (currently amended):** Plant for the implementation of a procedure according to claim 1 for the cold processing of tubular metal elements or other elements with dead or through holes, nuts comprising the following machining steps:

- (a) preparing a blank of full metal material;
  - (b) straightening the full metal material cutting of the metal material into pieces of a determined length;
  - (c) passing the pieces sequentially through a plurality of work stations of a work centre comprising several presses in order to obtain a blank element presenting one or two longitudinally opposite dead holes separated by a central transverse section;
  - (d) through drilling of the blank by removal of this central traverse section;
- wherein the metal elements having a diameter greater than 30 mm,

wherein the plant comprises a series of hydraulic presses adjacent to each other, designed

to carry out a successive series of pressing operations on pieces to be machined which are transferred from one press to another by means of appropriate automated manipulators.

**Claim 17 (currently amended):** The plant ~~Plant~~ according to claim 16, wherein the plant ~~it~~ also comprises a drilling or shearing station.

**Claim 18 (currently amended):** The plant ~~Plant~~ according to claim 17, wherein this drilling or shearing station consists of a vertical mechanical press.

**Claim 19 (currently amended):** The procedure ~~Procedure~~ according to claim 9, in which the material is cut into pieces of a predetermined length, advantageously by various possible procedures ~~such as for example mechanical or hydraulic processes~~ by means of one or mobile blades or by a circular saw.

**Claim 20 (new):** The procedure according to any one of the claim 2, in which the setting up and preparation of the full blank differs according to the metal material used.

**Claim 21 (new):** The procedure according to claim 20, carried out on material consisting of stainless steel, wherein the stainless steel is initially treated by solution annealing and pickled in a balanced solution of sulphuric acid, hydrofluoric acid, potassium permanganate and hydrogen peroxide, and subsequently washed repeatedly by means of immersion in a salting tank in order to facilitate the pressing.

**Claim 22 (new):** The procedure according to claim 20, carried out on material consisting of low-alloy steel, wherein this material is pickled in sulphuric acid and subsequently washed in a phosphating tank in which, by chemical reaction, a layer of zinc phosphate is created on the surface of the piece, then immersed in a sodium stearate tank where, again by chemical reaction, a thin layer of zinc stearate forms on top of the previous layer of zinc phosphate.

**Claim 23 (new):** The procedure according to claim 2, characterised in that a plant or machining centre consists of a series of hydraulic presses of various sizes and power levels connected by a transfer unit designed to move the pieces being machined.

**Claim 24 (new):** The procedure according to claim 23, wherein the transfer unit consists of a series of gripper units powered by an appropriate source of energy.

**Claim 25 (new):** The procedure according to claim 2, wherein the drilling is carried out by a special unit consisting of a vertical press.

**Claim 26 (new):** The procedure according to claim 25, wherein this vertical press consists of a mechanical press.

**Claim 27 (new):** The procedure according to claim 2, wherein the functioning and synchronisation of the individual presses and of the transfer unit are controlled by a PLC or a microprocessor.

**Claim 28 (new):** Plant for the implementation of a procedure for the cold processing of metal elements such as standard and special shape extruded or pressed screws, comprising the following machining steps:

- (a) preparing a blank of full metal material;
- (b) straightening the full metal material cutting of the metal material into pieces of a determined length;
- (c) passing the pieces sequentially through a plurality of work stations of a multi-press plant in order to obtain a finished element with or without swarf or waste

wherein the metal elements have a diameter greater than 30 mm

wherein the plant comprises a series of hydraulic presses adjacent to each other, designed to carry out a successive series of pressing operations on pieces to be machined which are transferred from one press to another by means of appropriate automated manipulators.

**Claim 29 (new):** The plant according to claim 28, wherein the plant also comprises a drilling or shearing station.

**Claim 30 (new):** The plant according to claim 29, wherein this drilling or shearing station consists of a vertical mechanical press.